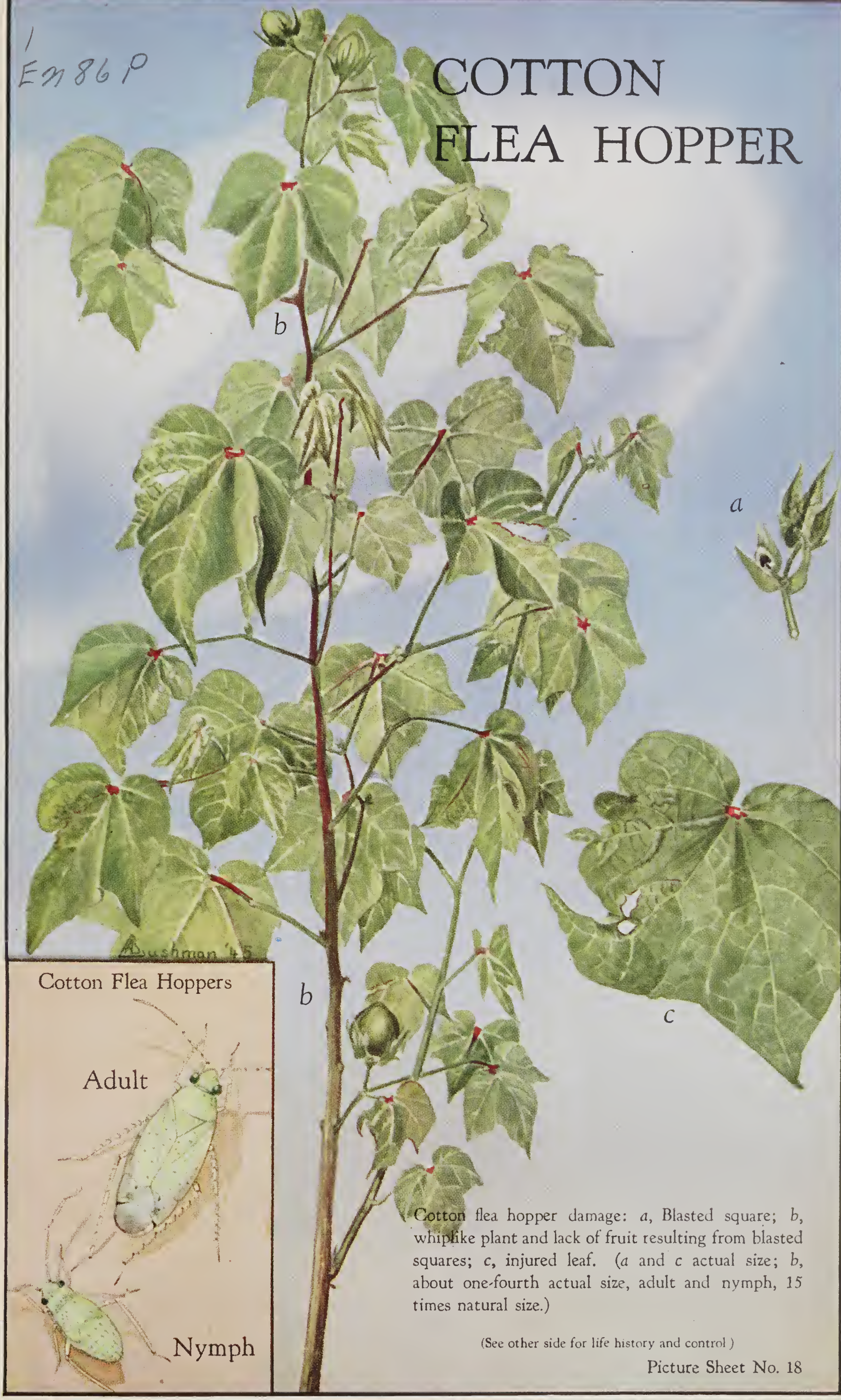
COTTON FLEA HOPPER



Cotton Flea Hoppers

Cotton flea hopper damage: *a*, Blasted square; *b*, whiplike plant and lack of fruit resulting from blasted squares; *c*, injured leaf. (*a* and *c* actual size; *b*, about one-fourth actual size, adult and nymph, 15 times natural size.)

(See other side for life history and control)

Picture Sheet No. 18

Bureau of Entomology and Plant Quarantine, Agricultural Research Administration, United States Department of Agriculture

COTTON FLEA HOPPER

(*Psallus seriatus* (Reut.))

Life History and Injury

The cotton flea hopper infests cotton throughout the entire Cotton Belt. The greatest damage is caused in Texas, Oklahoma, and Louisiana, but in some years losses are also serious in other States. The winter is passed as eggs in the stems of *Croton* (goatweed), other weeds, and to some extent in cotton. The eggs hatch early in the spring, and the population builds up rapidly on certain tender weeds, such as horsemint, *Croton*, and evening primrose. There is some movement to cotton, and this migration increases as the weed hosts become tough. Rainfall is favorable to the breeding on cotton, which continues as long as the plants are succulent. After the active squaring season is past, the leafhoppers return to weeds to feed and to lay their overwintering eggs. Both the winged adults and the wingless nymphs, or young flea hoppers, are very active and are difficult to see until one becomes accustomed to looking for them. Both stages feed on the juices of the tender parts of the cotton plants, especially the terminal buds and small squares. The leaves become deformed and somewhat ragged in appearance, but the greatest damage is caused to the small squares, which are often killed when no larger than a pinhead. The injured squares turn brown or black and fall from the plants while so small that they are frequently overlooked, and the failure of the plants to bloom is sometimes attributed to weather or other unfavorable conditions. The infested plants grow taller and more whiplike, with fewer large branches than normal plants, and usually produce only a few bolls near the tops. A generation of flea hoppers requires from 2 to 3 weeks, and this pest often becomes sufficiently numerous on cotton to cause almost complete loss of the crop.

Control

If cotton is not squaring properly, or if young cotton fails to set small squares, the tips of the main stem (terminal buds) of the plants should be examined for flea hoppers. Dusting should be started when 15 to 25 flea hoppers (depending on the size of the plants) are found per 100 terminal buds. Dust with 12 to 15 pounds per acre of 5-percent DDT-sulfur mixture, a mixture of 2 parts of sulfur to 1 part of calcium arsenate, or finely ground dusting sulfur. DDT ground with pyrophyllite or talc is also very effective against the flea hopper, but is more likely to cause an increase of red spiders than when mixed with sulfur. Sulfur alone will control young flea hoppers (wingless nymphs), but the sulfur-calcium arsenate mixture gives a better kill of adults and will also control the boll weevil, when both insects are present. Two or three applications at 5- to 7-day intervals will ordinarily give control, but where infestations are heavy, or large numbers of flea hoppers are continually moving into cotton, from four to six dustings with sulfur or calcium arsenate-sulfur mixture may be needed. Experimental work to date indicates that two applications of DDT dust will control flea hoppers throughout the season.

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